WE CLAIM:

1.   A method of interactively designing a user interface comprising:

storing a domain model, a user model, a task model, and a device model in a computer readable memory, wherein the domain model characterizes an application for which the user interface is to be used, wherein the user model characterizes a user who is to use the user interface, wherein the task model characterizes tasks to be performed between the user interface and the user, and wherein the device model characterizes interaction delivery devices to support the user interface; and,

matching characteristics in the domain model, the user model, the task model, and the device model so as to construct the user interface.

2.   The method of claim 1 wherein the matching of characteristics comprises forming an intersection between the domain model, the user model, the task model, and the device model.

3.   The method of claim 2 further comprising creating the domain model, the user model, the task model, and the device model using a consistent notation.

4.   The method of claim 1 wherein the matching of characteristics comprises:

matching the interaction delivery devices to information requirements defined in the task model and to the users defined in the user model to identify interaction delivery devices that support the information requirements and the users; and,

matching presentation elements to task primitives of the task model and to characteristics provided in the domain model to identify presentation elements that support the task primitives and the domain characteristics, wherein the presentation elements comprise display objects.

5.   The method of claim 4 wherein the matching of characteristics comprises creating a presentation for each identified presentation element and a matching one of the identified interaction delivery devices.

6.   The method of claim 5 wherein the matching of characteristics comprises scoring and sorting the presentations, and wherein the matching of characteristics comprises selecting the presentations having the best scores.

7. The method of claim 6 wherein the matching of characteristics comprises generating the user interface based on the selected presentations.

8. The method of claim 6 wherein the selecting of the presentations comprises selecting the presentations having the best scores for all interactions between the users and the user interface.

9. The method of claim 8 wherein the matching of characteristics comprises generating the user interface based on the selected presentations.

10. The method of claim 5 wherein the matching of characteristics comprises generating the user interface based on the presentations.

11. The method of claim 1 wherein the domain model contains information characterizing data, concepts, and relations of the application in a domain as specified by a designer, wherein the user model contains information characterizing roles and preferences of users of the user interface, wherein the task model contains task primitives to be performed between the user and the user interface, information required of the task primitives, and sequences of the task primitives, and

wherein the device model contains information including

modality characterizing interaction delivery devices that

are available to deliver the user interface.